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## GEOGRAPHICAL RECORD.

### NORTH AMERICA.

NAVIGATION ON THE TANANA.—The extent of navigation on the Tanana river, the largest affluent of the Yukon, has long been in doubt. Lieut. Allen, who first explored it, floating down the river in a skin boat, said it was not navigable for more than 300 miles, or half the distance from its mouth to its source. Later, Mr. E. H. Wells said he found a good stage of water, and believed steamboats might ascend the river almost to its head. The question seems to have been settled by the steamer *Lavelle Young*, which, as our Vice-Consul at Dawson relates in the "Consular Reports," ascended the river for 310 miles in August last. The steamer, drawing four feet of water and carrying 150 tons of merchandise, started up the river to settle the question whether the upper Tanana might be reached by a boat carrying a considerable quantity of supplies. It was desired, if possible, to reach a point 480 miles up the river, and establish a trading post at the point where the trail from the Copper river to the Klondike crosses the Tanana. With a depth in the channel averaging five to six feet for most of the way, the steamer made 310 miles in three and a half days; but when still 170 miles from her destination she was brought to a stop, ten miles above the lower end of the Bates Rapids, by the shallowing of the river to three and a half feet. The fact, however, that the river for half its length has been proved to be easily navigable for vessels drawing four feet is of geographical and economic importance. Gold indications have been chiefly discovered on the streams emptying into the Tanana, and it was found that four of these affluents, between the mouth of the Tanana and Bates Rapids, are easily navigable by small steamers for from 50 to 100 miles. The party on the steamer reported that the country has every appearance of rich mineral deposits.

SUBSIDENCE OF AMERICAN COASTS.—The Coast and Geodetic Survey has called attention for some years to the very gradual subsidence of a part of the coast-line of the Gulf of Mexico. Mr. J. Crawford, in *The American Geologist*, says there is no question of the fact that the entire American Isthmus from Salinas Bay, in Mexico, to the south side of Darien, is subsiding slowly; while south

of Darien, on the Pacific Ocean side, at least to the Straits of Magellan, there is a corresponding elevation of the land, but much too small annually to be generally noted. There was a time, evidenced by the fiords on the eastern coast of Nicaragua, southern and southwestern Cuba, and western sides of the Antilles, when Nicaragua was a continent extending eastwardly to at least the east side of the Antilles.

**THE DANISH WEST INDIES.**—The desire of Denmark to sell her three islands in the West Indies is due to the fact that they are no longer profitable to her. The whole trade of her Greenland colony is a monopoly of the Government, the profits being considerable. Iceland is a profitable colony, as its trade is largely in the hands of Danish merchants; but Denmark has derived little profit from her islands in the West Indies since the decline of the sugar industry in St. Croix and the shipping interests of St. Thomas. The islands buy most of the food they do not raise, and the coal they sell to steamships from this country. England sells them most of their cotton goods, and little, except butter, is purchased from Denmark.

The particular advantage this country may expect to derive from the islands is the superiority for a naval station of the harbour of Charlotte Amalie over any port in Porto Rico. The harbour, completely landlocked, is two miles long, a mile and a half wide, and, though much of it is shallow, there is ample anchorage for a large number of vessels. The deep water and other conditions on the east side of the long, narrow island which guards the harbour on the west are very favourable for the building of a dry dock, coal wharves, workshops, and other appurtenances of a naval station. St. Thomas practically has no industries excepting its small shipping interests. Its sugar fields were abandoned when slavery was abolished in 1848, and have never been reoccupied. The island of St. Croix to the south is the most fertile of the three, and modern machinery and modern methods are used by its planters in the production of raw sugar. In this respect they are in advance of the planters in the British islands of the Lesser Antilles, who use the old methods and derive power wholly from windmills.

**YELLOW FEVER NO LONGER A SCOURGE IN CUBA.**—Warfare was actively waged last year upon the large breeding-places of mosquitoes in Cuba. The result appears to have been most satisfactory. The death rate from yellow fever was greatly reduced, and several

months elapsed without a single death from this disease in Havana—a result never before known in the history of the city. At the beginning of the present year the monthly death rate in that city was smaller than in a number of our large Atlantic coast cities. This is due evidently not only to the war upon the varieties of mosquitoes which carry yellow fever germs, but also to the systematic cleaning of streets, vaults, and harbour and the incessant assault with broom and disinfecting agencies upon all uncleanness. The good effects of this régime were manifest even at the end of the first year of our occupancy, when the total deaths for the year were only about half those of 1898. Havana is now one of the cleanest cities in the Western world.

FOREST WEALTH IN THE HUDSON BAY REGION.—Mr. Henry O'Sullivan, Inspector of Surveys for Quebec, has summarized the progress of exploration in the forest region between northern Quebec and James Bay in a report printed by the Canadian Government, last year. The forest wealth is, as yet, most available for exploitation. The mouth of the Little Nottawai river is well situated for extensive pulp industries, a special advantage being that water power may be utilized close to tide water. The river has many large lakes and reservoirs, and the water delivery, at an ordinary stage of low water, is estimated at 25,000 cubic feet a second. The whale and other fisheries of the Bay, as well as the mineral indications throughout the entire region and the great timber resources, will doubtless result in railroad communications. Until they are supplied the resources of this region will be of little value.

#### AFRICA.

THE CAPE TO CAIRO TELEGRAPH.—The overland telegraph line that is to connect the north and south coasts of Africa has been completed as far as Ujiji, on the east coast of Lake Tanganyika. Messages may now be sent from Cape Town about 2,500 miles north, or nearly three times the distance between New York City and Chicago. The wire is strung on insulated iron posts sent out from England. The total force at work averages ten white men and about 1,200 negroes. The work is very difficult, as it has been necessary to transport all material by human or animal portage for hundreds of miles; much work is also necessary to prepare the route through jungle and forests for the construction parties. The line will now be pushed northward from Ujiji into British East Africa and down the Nile as far as Fashoda, which is connected by

wire with Khartum and Alexandria. When the work is completed to Fashoda one of the longest telegraph lines in the world will extend from the northern to the southern coasts of Africa.

THE PEOPLE OF UGANDA.—Sir Harry Johnston, in his paper on Uganda, Ruwenzori and the Semliki forest (*The Geographical Journal*, Jan., 1902), says that the poor and untidy huts of the common people do not correspond with the relatively high position which the Baganda occupy in other respects among African peoples. The chiefs, however, erect buildings of reeds, palm trunks, and thatch, which are imposing, and often elegant, in appearance. The Baganda are a carefully-clothed people who are almost more squeamish about any exposure of the person than Europeans. Yet they are a much less moral race than the naked Kavirondo, though Christianity is exercising a decidedly elevating influence on their habits in this respect. This is, perhaps, the only adverse thing that can be said about them, for in other respects they are a most amiable and charming black race. In politeness, quickness of intelligence, and appreciation of beauty they are the Japanese of Africa, and he is convinced that a very great future lies before the Baganda, if they are properly led forward in a wisely-administered British Protectorate.

THE HIGHEST POINT OF AFRICA.—Sir Harry Johnston says in *The Geographical Journal* (Jan., 1902):

I am personally convinced that the highest point of Ruwenzori is not under 20,000 feet in altitude, and that it will therefore be found to attain the greatest altitude on the continent of Africa. There must be over 20 miles of almost uninterrupted glaciers along the highest part of the ridge, and this under the Equator must presuppose a very considerable altitude. Apart from which, when, after the most arduous climb I have ever experienced, I reached my highest point on the flanks of the snow-range—14,800 feet—the mountain above me seemed a thing I had only begun to climb, and towered, so far as I could estimate, another 6,000 feet into the dark-blue heavens. Permanent snow, however, lies as low as 13,000 feet, which also is the lowest point to which any glacier reaches, so far as my limited investigation extends (*p. 28*) . . .

With the amount of snow and the extent of glaciation in this equatorial region, the maximum of 16,000 feet, suggested for the extreme altitude, is impossibly inadequate. Judging by eye alone (and I have seen the Alps and Himalaya), I should give a minimum of 20,000 feet for the highest point (*foot-note, p. 41*).

Mr. W. H. Wylde, in July last, also ascended above the snow line of Ruwenzori. He and Mr. Ward, like their predecessors, made their way up the Mubuko valley, the real climb beginning on July 8. On the 10th a start was made for the snow, and Mr. Wylde says that he and Mr. Ward ascended 500 feet, by aneroid, beyond the place where Sir Harry Johnston turned back, their highest

point being 15,000. He estimates the highest peak at 19,000 feet at least, and says that though a fully-equipped traveller might reach the summit, the chances would be against success, owing to the trying climatic variations and the intense physical discomforts experienced.

SOCIAL GEOGRAPHY IN THE SAHARA.—The Suf and M'zab oases, in the southern part of Algeria, illustrate the exceptional nature of individual property in these desert regions. The surface of the land is not property, for, in the immense areas covered with sand and crossed in all directions by sand dunes, any one may take as much land as he pleases for the planting of date-palms or the building of a house. Water is not regarded as constituting property, because it extends in comparatively large sheets under the sands and is within the reach of any one who has perseverance enough to tap it for irrigation purposes. The date-palm is alone regarded as private property. There are often four or five proprietors in a single palm grove. One man may own several trees in each of a number of groves. Everybody owns what he plants, and, of course, no one can appropriate the ground in which another has planted a tree; but if a tree dies and its owner does not immediately replace it with another, the first comer is at liberty to plant a tree in that spot. In other words, water and the earth are common and not individual possessions. They cannot be appropriated for private purposes except during the time that they are used for cultivation. No one is permitted to plant a palm within several metres of another tree, nor may any one sink a well within a certain distance of a palm already planted. Thus the peculiarity of the desert surface and the water resources make the tree the initial cause, the limit and the end in view of all individual ownership.—*La Géographie*, Jan., 1902.

#### GENERAL.

MAPS MARKING THE LINE IN THE SEA WHERE THE LAND BECOMES INVISIBLE.—Dr. L. Henkel has two maps in the December number of *Petermanns Mitteilungen* showing the line in some seas along which the land becomes invisible. One of them shows ten conspicuous mountains, on or near the coasts of Greece and the islands of the Ægean Sea, as centres of circles, the arcs extending over the water being approximately the seaward limit at which these mountains are visible. The other map, showing the entire Mediterranean and the Adriatic, Black, and Azov Seas, indicates in

blue the water areas that are out of sight of land, and in white those from which land is visible. This map makes it evident that the portion of the Mediterranean from which land may be seen is of astonishing extent. Both maps are valuable contributions to the study of the early days of navigation, when the small barks of the mariner rarely ventured out of view of landmarks along the coasts. They help to explain the fact that maritime enterprise received special development in the Mediterranean at the hands of the Phœnicians, Carthaginians, and Greeks.

Some point of land is in plain view from every part of the Adriatic. This is true also of the island-strewn waters of the Ægean. Land may be seen also over the larger part of the Black Sea, owing to the high mountains of the east and south coasts and along the central part of the north coast. On the other hand, most of the surface of the Sea of Azov is out of sight of land, on account of the flatness of the low-lying country adjacent to it.

THE LOST WALDSEEMÜLLER WALL MAPS DISCOVERED.—Professor F. R. von Wieser announces in *Petermanns Mitteilungen* (1891, No. 12) that the two long-lost wall maps of Waldseemüller have been accidentally discovered in the library of Prince Waldburg in Würtemberg. Prof. P. J. Fischer, who is preparing a scientific work on the discoveries of the Norsemen in Greenland, was looking for old Greenland maps in this library when he found the Waldseemüller maps in sheets stowed away in a folio that perhaps had not been opened in many generations. One of them, issued in 1507, is the oldest map on which the name America appears. Waldseemüller published with this map a small explanatory treatise in Latin entitled "*Cosmographiæ Introductio*," with an appendix containing translations of the letters of Amerigo Vespucci. In this pamphlet, of which a few copies are preserved in libraries of Europe and this country, the author said:

And the fourth part of the world having been discovered by Americus, it may be called Amerige; that is, the land of Americus, or America.

This suggestion was adopted by geographers generally, the name being first applied to South America, and later extended over the whole of the Western world. On the map found by Dr. Fischer the name America is printed in large letters in South America, just above the Tropic of Capricorn.

Within a few years, however, additional light was shed on the question of the discovery of the mainland; the copy of Waldseemüller's *Carta Marina* (1516), the second map found by Prof.

Fischer, does not contain the name America. But it was then too late to change the name. The 1,000 copies of the map of 1507 had been scattered all over Europe. The name America was now used by scholars and writers, and was a part of the common speech. The map had fixed the name and it would never be changed.

Prof. von Wieser says of the map of 1507:

The peculiar importance of this cartographic monument is based far more upon its profound, widespread, and enduring influence upon the development of the true conception of the world's form than upon the circumstance that it was the first map upon which the name America appeared.

Prince Waldburg intends to reproduce these two maps in *fac-simile* under the editorship of Prof. Fischer and Dr. von Wieser, who says that the carrying out of the work will not long be delayed.

DEATH OF AN AUSTRALIAN EXPLORER.—Edward John Eyre, the first white man to cross the southern part of the Australian desert, died in England in November last. One of the largest lakes in Australia bears his name. His geographical work ended with his great journey; but the exceptional interest of this event attracted wide attention, and the explorer received the Founder's Medal of the Royal Geographical Society in 1843.

Eyre went to Australia in 1832, when a boy of seventeen, to seek his fortune in sheep farming. He first engaged in this business in New South Wales, and then in the transportation of sheep from that colony to the newly-opened tracts of South Australia. The exploration of the lower courses of the great Australian rivers and of the regions around the Gulfs of St. Vincent and Spencer had revealed good grazing lands; the colony of South Australia had therefore been founded, and Adelaide was its chief town.

The colonists believed that wide tracts of pasture lands probably existed beyond the inhospitable zone that bounds the Adelaide district on the north and the west. It was Eyre's work that established the fallacy of this view. His first journey was to the north in 1839, where his search for new pasture lands was unsuccessful. A large area of this dry region, however, has since been turned into grazing land by irrigation. He discovered the Flinders mountain range and the long, narrow Torrens lake, whose northern limit he was unable to discern from his point of view. A year later he found that the lake had dried up, this being the first time that the phenomenon of the disappearing and reappearing lakes of Australia was called prominently to attention.

After returning from his second expedition to Lake Torrens, Eyre, with one white companion and a few blacks, set out for the



west in search of pasture lands along the shores of the Great Australian Bight. He travelled for nearly 1,200 miles through a region no white man had yet seen; and he failed to find an acre of grass land on the way. A part of his small force, when half way across the desert, killed Eyre's white comrade and fled, leaving the others to struggle on almost without supplies for 600 miles to King George Sound, where they arrived, after incredible hardships, in the spring of 1841.

#### ARCTIC EXPEDITIONS.

FOUR EXPEDITIONS—two American, a Norwegian, and a Russian—according to the latest and best information, are now wintering within the Arctic Circle, while a little below it, on the east coast of Greenland, a Danish party awaits spring for scientific work and exploration. Of the expeditions in the field, the first place falls readily to Peary's, now closing the fourth year of absence and isolation. Five years, indeed, have passed since Mr. Peary, upon the Chickering Hall platform of the American Geographical Society, after receiving its Cullum Geographical Medal, promulgated to the Society, and through it to the public, his plan for the attainment of the Pole, and almost four years have gone since he bade good-bye to home and friends on his high and honourable quest. The work which he has already reported, and recorded upon maps, includes extensive explorations in Western Grinnell Land, the discovery of new land-masses to the northwest of Greely Fjord, high peaks on the western, and noble glaciers on the eastern, slope of the divide, and a complete revision of the map of the Hayes Sound-Buchanan Bay country. Later has come the news of his still greater achievement, second only, Sir Clements Markham says, to the attainment of the Pole itself—the rounding of the northern end of the Greenland archipelago in the spring of 1900, and completely delimiting the outlines of that coast so long shrouded in mystery. The last word from Mr. Peary, in the spring of 1900, left him at Fort Conger after an arduous march of three weeks from his headquarters at Etah, at Foulke Fjord. Leaving historic Conger on April 15, with Henson, his coloured man, and a party of five Eskimos, Peary reached Black Horn Cliffs April 24, where two of the natives were sent back; pushed on to Cape Britannia, where two more were dispensed with, and on May 8, about midnight, opened Lockwood and Brainard's "farthest north" cairn on Lockwood Island. Pushing on past Cape Washington, Lockwood's "farthest seen," Peary turned the northern point of Greenland at 83:27, and thence took

his departure directly over the sea-ice for the Pole. Baffled, however, at 83:50, by a disintegrated pack and ominous signs of open water toward the north, he returned to land and pressed eastward and southward, rounding the entire archipelago, coming in sight of the headland which, eight years before, at Independence Bay, he had christened Navy Cliff. Resting dogs and men at the terminal of his advance, he retraced his steps practically along the same route, more than 160 miles beyond the earlier track of any human foot, and by the middle of June was again safely established at Fort Conger, without the loss of a man, illness, or accident worth speaking about. The following months were spent awaiting the arrival of the auxiliary ship, which did not come; in the musk ox hunt for the winter of 1900-01, and in an unsuccessful attempt in April, 1901, to proceed due north from Cape Hecla, the Greenland route having been, by the expedition of the year before, eliminated from the possibilities. On his birthday, May 6, 1901, Mr. Peary reached the *Windward* at Cape Sabine, finding on board his wife and daughter, prisoners in the ice for eight months. The *Erik*, auxiliary for 1901, effected a junction with the *Windward* August 4; and the last word from Peary, August 29, left him in his temporary camp on the south side of Herschel Bay, on the west side of Smith Sound, ten or a dozen miles southwest of his permanent headquarters at Cape Sabine. With the return of light, Peary will proceed along the familiar, well-travelled route of the Smith Sound ice-foot to Fort Conger, passing caches of supplies every 25 miles, and will advance still further along the coast until at Cape Hecla, northern point of the American continent, he will take his final departure from the land. In a general way, the distance of the whole journey from Cape Sabine to the Pole is about 850 statute miles; but the first third is along a route well marked and thoroughly known, so that practically Mr. Peary's task is 500 miles over the sea-ice and return. That he will accomplish this, of course, no man dares predict. Yet there are many circumstances upon which intelligent hope may be based. Eighty tons of walrus flesh, the best dog food in the world, were landed at Cape Sabine by the *Windward* last summer, and a fourth as much more at the Herschel Bay camp by the *Erik*, Mr. Peary's purpose having been to subsist the dogs at the latter place until the supplies there were exhausted and then to take them north to the main depot. His pack at the end of August numbered at least 60 strong, healthy animals, and these will be augmented by the very best of the tribe's when they shall pay their spring visit to the explorer, now becoming as regular an incident in their annual

routine as the return of the light. Unless the dreaded plague should break out among the dogs, as it did in 1894, there seems no reason to doubt that Peary will take the field with an exceptionally strong force. Not only will it be necessary for him to subsist the dogs on the land journey, but when he leaves the coast he must take sufficient stores for the whole task, homeward as well as outward, since there is no reason to expect that game of any sort can be captured upon the ice of the open sea. The disadvantage, however, in subsistence, will, perhaps, be more than made up by the facility of travel; and if conditions are favourable, it is not unreasonable to hope that an average of 20 or 25 miles per day will be maintained, and that when the expedition gets further from the land, ice conditions will improve and the last stages toward the Pole will be easier than the first.

Mr. Peary will take a marine equipment, so that no ordinary leads, such as have been seen, or are likely to be met with, will seriously interrupt his progress. Should the unexpected open sea be found, or the pressure reaches of the paleocrystic ice prove impracticable, detours will, of course, be necessary, which may require longer time, and involve more lines of sledging; but with the supply of food sufficient, there is no reason to doubt that Peary will succeed. Returning southward, it is possible that Peary may seek a new route from Cape Hecla, or, perhaps, more likely, from Fort Conger, taking to the high ice-capped interior, and coming directly down to the westward of Smith Sound on a line nearly parallel with its coast. There is also possibility that if drifting ice should compel, or other circumstances make it desirable, Mr. Peary may cross Lincoln Sea, and, striking the Greenland coast somewhere about Sherard Osborn Fjord, make his way over the ice-cap to the Eskimo settlements on Inglefield Gulf.

The Peary steamer, next summer, will take an early departure for the north in order to reach Cape Sabine, the rendezvous, at the earliest practicable moment, not only that it may have abundant time to take advantage of all favouring sea, ice, and weather conditions, but that all the points on both sides of Smith Sound, Cape Sabine, on the west, Etah, and all the Inglefield Gulf settlements, on the east, may be visited more than once, if necessary, and tidings from Peary, or any of his party, be obtained at the earliest moment. The Peary Arctic Club, a number of his loyal friends, have pledged themselves to the work until it shall be finished. The historic *Windward*, which has already spent two winters in the north in the service, equipped with new boilers and engines, or a chartered

steamer, with Mrs. Peary and Miss Peary on board, and with Capt. Samuel W. Bartlett, her excellent Newfoundland navigator, as master, will make what it is hoped will prove to be her final and successful cruise to the north.

THE BALDWIN-ZIEGLER EXPEDITION is wintering in Franz Josef Land, with its ship, the *America*, formerly the Dundee whaler *Esquimaux*. The auxiliary Norwegian steamer *Frithiof* parted from the *America*, August 13, 1901, in latitude 80 deg. 24 min. north, longitude 55 deg. 52 min. east, leaving an abundantly-equipped and enthusiastic party. The Baldwin company has many appliances, of which the practical value has yet to be demonstrated, among which are balloons, with an automatic releasing device, which are expected to deposit records and reports as they may be impelled by the wind and currents of air, so that it is by no means unlikely that the first information from the Arctic will come from the Baldwin-Ziegler Expedition. When the *Frithiof* left the *America* she was heading to the north seeking to find satisfactory winter quarters, with the general plan that a base of operations would be established upon land at some point whence the expedition for the Pole might depart as early as the light of 1902 should warrant. Baldwin had with him more than 400 Siberian dogs, a few ponies from the same country, and an ample supply of Chicago specially-prepared food for the former, with abundant equipment for all the sledge and field work. Baldwin himself, leader of the expedition, has had a liberal training in Arctic work, having been one of Peary's three companions in his farthest on the inland ice journey of 1894, and of the Wellman Franz Josef Land party in 1898-99. His general theory of field work is practically the same as Peary's, and now that the Greenland route has been eliminated, the contest between the two Americans is almost along identical lines, and will cover a distance nearly equal.

The latest word from Baldwin by the *Frithiof*, from his camp on Alger Island, was: "I fully expect to raise the Stars and Stripes at the North Pole, July 4, 1902." Baldwin had with him forty-one men, of whom seventeen were Americans, the entire crew of the ship being Swedes, with six Russian dog drivers and helpers in the party. Capt. F. J. Johansen, Nansen's comrade in his memorable retreat over the sea-ice and winter in the hut on Franz Josef Land, is in command of the *America*. While the attainment of the Pole is the prime object of the Baldwin-Ziegler Expedition, it expects to do valuable scientific work, and has abundant equipment for that

end. Meteorology, geodesy, and photography are all in the hands of competent specialists, and three skilled physicians will not only attend to the health and sanitation of the party, but will bring valuable physiological data upon the effects of Arctic environment.

Provisions for three years were on the *America*, which, when the *Frithiof* left, was deep in the water, perhaps compelling an early discharge upon the nearest available land of a portion, at least, of the cargo, in order to secure that buoyancy of the ship necessary to her safety and highest efficiency in the ice. Alger Island, upon which the temporary Camp Ziegler was made, is but a small rock, less than a mile in diameter, and hardly available as satisfactory winter quarters.

While the *America* and *Frithiof* were serving the main expedition and transporting its forces and supplies to the Franz Josef Land base, a second auxiliary steamer, the *Belgica*, was dispatched to the east coast of Greenland, where, on Shannon Island, she established a station and deposited supplies, which would be available in case of retreat to the southwestward of the Pole. Thus Mr. Baldwin hopes to have three lines open—one to Franz Josef Land, another to the east coast of Greenland, and a third to the western coast and the native settlements with which he is familiar. The Baldwin-Ziegler project now contemplates an auxiliary steamer from Tromsø or other Norwegian port next summer, when efforts will be made to effect a junction with the *America* and to bring home full reports of the work and experiences of the party.

THE THIRD EXPEDITION now in the field, and concerning whose results little is definitely known, and from which, indeed, nothing has been heard for more than two years, is that of the Norwegian Sverdrup, Nansen's navigator in that same historic *Fram* which first pierced the drifting ice of the Polar basin from east to west. Sverdrup, with Lieut. Baumann as executive officer, entered Smith Sound in the summer of 1898, wintered in Rice Strait, meeting accidentally with Peary and learning of the proximity of the *Windward*, and in August was joined by the Peary steamer *Diana*, which brought home mail and reports. The Peary steamer *Erik*, last summer, could learn only that, from Godhavn, in March a steamer had been seen in Davis Strait heading north, which lent colour to the theory that the *Fram* may still be in Jones Sound endeavoring to work to the westward, and possibly into the undiscovered country, either sea or land, to the northward. That there

is any reasonable ground to expect a high northing by the *Fram*, in the Smith Sound route, does not appear. The situation is of sufficient doubt to cause some anxiety among the promoters of the *Fram* expedition, though they find comfort in the fact that Capt. Sverdrup's last report, in the summer of 1899, was that he had four years' provisions on hand. His surgeon, Dr. Svensen, died during the winter of 1898-99, while the ship was in Rice Strait, but otherwise his entire company, when last seen, in August, 1899, were in excellent physical condition.

Just what Sverdrup's work for the first year was his friends in Norway have not informed the world. There is some reason, however, to believe that they will at an early day do so, as the long-continued absence of the expedition makes everything concerning it of more than ordinary interest. It is but reasonable to agree with Peary's impressions of last summer, that Sverdrup could not have gone north through Smith Sound, attempting, as has sometimes been intimated, to round the northern coast of Greenland, without knowledge of that being gained either by the Eskimos or by the *Windward's* party imprisoned in the ice at Cape Sabine. Sverdrup's intention to enter Jones Sound in the summer of 1899 was well known, and the preponderance of evidence seems to be that he has pursued that course, seeking the country to the north-westward, where so much yet remains to be added to the maps. It is not, perhaps, worth while to speculate too closely upon Capt. Sverdrup's operations, though there seems to be no reason to believe that disaster has befallen him, since his ship is able to withstand extraordinary ice pressure; his supplies were abundant, and if he had been forced to abandon the ship and take to the land, it is hardly conceivable that, with a resolute and well-disciplined force, he would not have extricated himself and reached native settlements, where he could remain in safety and absolute comfort, although much time might elapse before the world would learn the facts. The Christiania friends of Sverdrup will send supplies by the Peary steamer next summer, and an effort will be made, so far as practicable, consistent with the main purpose of the expedition, to effect a junction, and, if assistance is needed, extend it.

THE FOURTH EXPEDITION, from which scientific results of much moment will doubtless come, is that of the Russian Baron, Edward Toll, wintering on Sannikoff Land, 77 deg. 30 min. north, one of the Siberian islands, and at a point farther north than that of the destruction of De Long's *Jeannette*. Baron Toll left St. Petersburg

in the Norwegian whaler *Sarja*, and worked his way eastward through the ice along the general lines of Nordenskiöld's *Vega* voyage. Adverse conditions prevented rounding Cape Chelyuskin, and the winter of 1900-01 was spent in Colin Archer port, discovered and named by Nordenskiöld, on the western side of the Taimyr peninsula. During the winter Nordenskiöld Islands were explored, and a coaling station established at the mouth of the Yenisei, indicating that Baron Toll intends ultimately to return to the westward over his own track, instead of pushing on to the eastward along that of the *Vega*, and emerge from the ice by way of Bering Strait. It was not his intention to attempt to reach the Pole, but rather fully to explore the land-masses to the north of the Siberian coast. With a comrade, it was his purpose to cross the Chelyuskin peninsula, and at the last report, April 16, the entire party were in good health. While Baron Toll is working at Sannikoff Land, a detachment will explore the new Siberian islands, the return of the expedition to St. Petersburg not being expected before the end of the season of 1902.

THE EXPLORATION OF WEST GREENLAND having been practically completed, Denmark now proposes to perform similar work for the east coast, and to clear up the ignorance in which it has been so long enveloped. The supply steamer last season carried a party headed by the botanist, Ch. Kruse, who expects to explore and map the large fjord, Sermilik, and Angmagsalik, at any rate, so far as they can be conveniently reached from the Danish trading station. At last accounts the supply ships had not returned; but for this reason the prospects of the expedition are believed to be good, indicating that the party has been safely landed, though the ship was unable to free herself from the pack. The work of the winter was to be prosecuted by sledges, and boats were included in the equipment for the survey of the fjords and glaciers as soon as the ice should break up in the spring.

TWO EXPEDITIONS, which have not yet taken definite form, are outlined, one of them with practical certainty. Roald Amundsen, navigator of De Gerlache's *Belgica* in the Antarctic, will, next spring, enter Hudson Bay and establish a location for the definite determination of the North magnetic Pole. Capt. Amundsen, a hardy, young Norwegian navigator, who proved his skill in many critical emergencies in the *Belgica's* cruise, has given months to thorough study and training in the science of magnetism, and will lead a thoroughly and amply prepared expedition. He proposes to

leave Christiania early in 1903 in a Norwegian steam sealer, which he will detain at his headquarters, if circumstances make it necessary, during the entire expedition.

ANOTHER UNDERTAKING is that of the Canadian captain, J. E. Bernier, who proposes to enter the Bering Strait, and, taking the ice further east than Nansen, to drift as far as practicable toward the Pole, and then make, over the ice, the remainder of the distance. At last accounts the Canadian captain was in London seeking to raise the last third of the \$150,000 estimated for the cost of the expedition, the greater part having already been pledged by friends in the Dominion. Capt. Bernier proposes to introduce wireless telegraphy, and a system of aluminum tubes, 18 feet tall, filled with condensed provisions, and doing double duty as caches and landmarks. He believes that the ship can be forced to a point within less than 100 miles of the Pole, and that then the remainder of the problem will be easy.

A SWEDISH-FINNISH expedition, led by Lieut. Ekstam and Dr. T. Alén, intends to visit the islands north of Matochkin Shar next summer, for geologic and botanical observations; but the Bauendahl East Greenland expedition appears to have been definitely abandoned.